[244] of night soil to the farms as fertilizer, and the farms which are 361 nearest to the bazaar and therefore receive the most night soil 241 form a zone of intensive garden cultivation producing vegetables and fruits for sale to the nonfarming population. In Kucha, a fairly large oasis, fertilizer is generously applied within a radius of five miles from the district city. Within this zone there is one orchard of seventy-five acres which produces apricots as a cash crop for the market. Beyond this inner zone, the amount of fertilizer applied decreases rapidly, and two other zones may be distinguished. In the near one rice, corn, wheat, and cotton may be grown and wheat and corn, when manured, may be grown in rotation. In the third zone practically no fertilizer is used and here hardier crops such as millet, kaoliang (sorghum millet), and potatoes are planted, and fallowing must be practiced. When some fields must lie fallow, the small farm is at a great disad- [435] vantage in competition with the large farm. In this zone the cost of transport to market rises rapidly, and the price of land falls.

361 Beyond this third zone there is usually no water and the desert 233 begins abruptly. Sometimes on the fringe of an oasis, however, 312 there is a thin zone of grazing. Sheep are pastured here, and at the edges of roads, and in land within the oasis too rough for irrigation. Sheep are also pastured in a few places in the scrubby land where dying rivers reach the desert. The shepherds are the Dulani, a people of uncertain but probably nomad origin who live a gypsy-like life and keep apart from the settled Uighurs of the Tarim oases. Both Uighurs and Dulanis breed a sheep which is better for mutton than for wool.

433 Most food is consumed in the oasis where it is grown, though 262 some oases have a surplus for sale while others are not self-suffi- 146 cient. The diet of an Uighur villager is largely cereals. The consumption of sugar, fats, and meat is meager except among the wealthy, and there is practically no milk in the diet. The daily calory intake of an adult villager, as estimated in Khargalik in 1943, was 1215 calories of wheat flour, 1215 of corn flour, and 150 of mutton.

1: Lattimore H-4 (no date) 1950 AI 1 Sinkiang AI 1

According to recent field-survey figures, which make possible rough estimates rather than accurate statistical tabulation, the annual wheat crop of Sinkiang is about 253,000 tons, representing about 44 per cent of the total crop of grains, beans, and seeds. Corn reaches 331,000 tons, or 28 per cent. Rice is about 71,000 tons, or 6 per cent. Barley, kaoliang (sorghum millet), oats and peas are classed together because they are largely used as feed grains. In Jungaria they are grown, largely by rainfall farming, to sell for feed to the long-distance camel caravans which, when times are peaceful, trade into the Outer Mongolian People's Republic, through Inner Mongolia to North China, and across the desert gap into Northwest China. The total crop reaches about 119,000 tons, or 10 per cent. Millet, soy beans and green beans, often in alternate rows in the same field, reach 71,000 tons or 6 per cent. Sesame, rapeseed, and linseed account for 71,000 or 6 per cent.

In subsidiary production, melons are grown in all oases. Dried melon rind is exported by caravan from Komul to China, as a delicacy, and the raisins of Turfan rival the melons of Komul in reputation. In gorges in the hills at the edge of Turfan, and also of Khotan, the growing of grapes is a local specialty.

The branches of willows growing along the banks of canals are cropped regularly for fuel. Another form of fuel, the use of which decreases the supply of fertilizer, is animal dung collected by old men and children who follow animals at pasture and scour the roads. The most important source of fuel, however, is the desert tamarisk gathered beyond the oasis.

Some peculiarities of Sinkiang agriculture are that winter wheat is grown north of the Tien Shan where, in spite of the cold, the seeds are protected by a cover of snow, but only spring wheat can be grown south of the Tien Shan, where lack of a snow cover exposes the seed to being frozen in the ground. Wheat is tending to be displaced by rice in oasis fields which are becoming alkalinized by irrigation. On the other hand the yield of rice is lower than that of corn, because the Uighur farmers do not transplant

N 315 S [315] new oil plants at Tu-shan-tzu in Sinkiang. Undoubtedly, the exploitation of the Yü-men oil field of Kansu has been considerably increased in the last two years. At a conference on petroleum research, called in May, 1954, by the Ministry of N 315 648 179 Fuel, Popoff, a Russian professor, laid great emphasis on the development of Yü-men oil fields, where Russians have been working side by side with German, Czech, and Rumanian oil experts (KM Oct. 1, 1954). Towards the end of 1953 the Russian Atlas (sic!) was experimenting there on an improved method of oil exploitation which was to be introduced in 1954 (PD Feb. 9, and June 23, 1954).

N 315 654 Special emphasis on oil prospecting and drilling are given by the Communist Government. Throughout the nation, geological surveying and prospecting plans since 1953 have been the most [redacted]tensive in China's history. Total Government investment [redacted]urveying in the Northwest in 1953 was nearly seven times more than the previous year. Twice as many oil wells were planned to be sunk in 1953 as compared to 1952, while work on other mineral reserves topped previous years' quota by thirty-three percent.

The bureau in charge of prospecting and surveying mineral reserves in the Northwest trained nearly 2,000 workers in drilling, surveying, drawing, and analysis in 1953. (Geological Report, China Monthly Review, May, 1953).

N 315 The first drilling for oil was made some sixty years ago at Yen-chang in northern Shensi province. During the Anti-Japanese war, China spent large sums to equip the China National Petroleum Corporation's field at Yü-men in Kansu. At present, the major production is at Shih-you-ho near Yü-men in the most northwestern part of Kansu at the foot of N [133] the Nan-shan. There the possible oil-bearing formations extend 700 miles, with a width of some tens of miles. Seepages are known in four localities, but only a few anticlines have N [433] been developed. Drilling started in 1939, and the yield amounts to several thousand barrels a day. The oil has a fifteen percent paraffin base. Prospects in Sinkiang appear even more promising, with oil on both sides of the Tien-shan Mountain Range. S 315 [648] [433] Drilling at Wu-su, west of Urumchi and in the northern foothills of Tien-shan began in 1935, under Soviet direction. Its current yield is only a few hundred barrels a day. However, some new fields have been discovered and new wells drilled in other parts of the province.

N. 315 S [315] Recently, both oil-extracting and refining industries have been growing rapidly. Refining facilities in northwest China with its five oil regions distributed in north Shensi, West Kansu, central Kansu, and Ho-hsi corridor and Sinkiang have been substantially extended. Petroleum development is one of

315 petroleum resources are between the last two stations extending in a north-south direction with a length of forty miles; the petroleum is yellow and easy to refine. The oil from Sinkiang is reportedly of better quality than that found in other provinces in the Northwest of China. One of the main centers of petroleum exploitation is at Tu-shan-tzu, five miles south east of Wu-su, on the Western Highway of Urumchi; there exist wells over 2,275 meters in depth.

[133] The intermittent Tertiary oil sands are said to lie between a light green shale above, and the sandstone below. No record of the drilled stratographic sections is available. The Sinkiang [648] provincial authorities employed two Russian drilling experts, and in 1935 they began to test the field with modern drilling rigs. Some time later the Russians took over the project and after 1939 increased their efforts to develop a producing field safe from enemy action. In 1942, only three or four of the seventeen known wells drilled were producing, and only one was flowing, the others being pubped. Yield was said to be ten to [433] thirty tons per well per day. Other wells were being drilled, but it is not known how many were completed. In 1943 there [648] was some disagreement between the Soviet and Chinese Governments and the Russians left the field. In August, 1944, an [433] American oil man visited the field and reported that the Chinese had uncapped six producing wells and were producing about fifty tons of crude oil a day. The wet gas was wasted as there was no equipment for saving it. The oil is thought to have a paraffin base, similar to that of Kansu. Sample distillation gives nineteen percent gasoline, twenty-three percent kerosene, and the remainder, black oil and residue.

At Tu-shan-tzu in Wu-su, there are more than thirty oil wells being drilled. There is a fairly good refinery which makes it the best oil-producing center of Sinkiang. In addition to gasoline and kerosene, it produces lubricating oil for airplanes.

At Taklak small oil wells are drilled by the natives along the Kun Alik Range to the south east of Taklak in Wen-su, northwest of Aksu. The natives work on a small scale during the Spring, Summer, and Autumn. At Hung-kou and An-chiu, southeast of Wu-chia, oil wells were drilled in the late 1940's, but no oil is produced in Hung-kou, although the natives extract some paraffin wax from the oil sands. However, oil is obtained from the well in An-chiu, but the output was only two to three gallons a day in 1949-50. (See Table III.) 7

315 654 Oil prospecting teams were sent to Sinkiang by the Northwest Geology Bureau under the Ministry of Geology in early 1955. They went to the Turfan and Dzungaria Basins (as well as Tsaidam of Chinghai province) to locate oil bearing structures, 1, [See p. 129--Analyst]

S 316 and Karashar. Both placer and lode or vein gold are mined. Placer gold is mined in the Ili River, the Kashgar River, S [804] Alintu River, etc. From 100 poods of ore, two to three zolot- [433] niks of gold are obtained (one pood : 16.38 kg. and one zolotnik: ninety-sixth part of a former Russian pound). One lode mine is said to have 1.6 ounces a ton. Placer gold is also found in Chinghai. Gold has been exploited systematically in both primitive and modern ways. Where water is available, gold is obtained by washing; where water is not available, by sifting the dirt in wind. The yearly gold output of the province is said to total 100,000 ounces. Gold mining operation in the Altai mountains has been on the increase since 1917 when some 10,000 miners extracted gold valued at over 60,000 taels. In 1942 S [439] thousands of mines were said to be operating in the district though most of the gold mined is reported to have gone to Soviet Russia. It is claimed that in the Altai Hou-kou field, a two and a half pound gold nugget was mined. Cherchen (Chieh-mo) and Keriya (YU-tien) are the richest gold deposits of southern Sinkiang. It is said that gold is so plentiful in Sin-kiang that all Moslem families have their own caches hidden N 316 away. Gold is panned at irregular intervals from the Hsi-ning and Ta-tung rivers and their tributaries in Kansu province. (See Table IX.)

S 135 c. Silver and Lead: Lead is most extensively distributed in Sinkiang; it is next only to copper in its wide spread.

Silver-lead ore is located in Burlutugai, near the Sairam Lake north of Kucheng and some other places. Lead content S [316] in the ore is up to thirty percent. Mining is carried on very primitively. Lead mining has been carried on at Wu-shih, Yenki, Wusu, Paicheng, and Kashih. At present, only the deposits at the last two places are being worked. Output is very low because of the backward working methods. Silver is much in evidence at Khotan and Karashar.

d. Aluminum and Bauxite

Rich aluminous ore deposits are located in the north of Kucha near Baldir, also in the vicinity of Yu-tien (Keriya) and some other places. In addition, bauxite from which aluminum is extracted, has been found at Ho-feng (Hishih-Tologai) in Sinkiang.

N 135 4. Non-metallic Minerals:

The important non-metallic minerals of Northwest China are salt and gypsum as well as jade and other precious stones.

a. Salt and gypsum.

Ninghsia of Kansu, Chinghai and Sinkiang are extraordinarily rich in salt. The numerous lakes and dried up lake basins provide the basic sodium salt. In eastern Alashan of former Ninghsia province, the Kilantai and the Charatai Dagasu are the most

N
135 famous salt basins in Northwest China. The latter is thirty-five miles in circumference and covered with a layer of fine salt two to six feet thick.

The Kilantai salt, commonly known as red salt, exports from T'eng-kou on the Yellow River to the markets of Shensi and Kansu (Ninghsia) each year, besides large amounts of salt.

The gypsum reserves have not been estimated by the geological survey of China, so no figures are available. The Northwest provinces of Shensi, Kansu, Chinghai, and Sinkiang are the principal producers. The Taklak gypsum deposit in
S
[135] Wen-su-hsien (41.19 by 79.50), Sinkiang, has been surveyed; with a ten meter thick bed, it is estimated the deposit contains more than 100,000,000 tons. Another gypsum bed at Pai-ch'eng, Kucha (41.45 by 83.04), with a five-foot bed, is estimated to contain 11,000,000 metric tons. A gypsum bed twenty meters thick at Ha-chia-tsun (36.17 by 63.33) in Yung-teng-hsien (36.44 by 103.24), Kansu province, was estimated to contain 500,000,000 metric tons of gypsum. A gypsum bed at Hsi-ning-hsien (36.37 by 101.49), Chinghai province, covers fifty square kilometers with the gypsum bed running from ten to thirty meters.

(See Tables X and XI.)

N
317 b. Borax:

Borax is produced in Chinghai province by gathering the top soil near saline lakes or dried-up lake basins, the "Tsaidams." The salts are boiled, and the liquid is evaporated. These crude salts are sent to Huang-yüan-hsien (36.42 by 101.13) for refining and separation of the borax. Raw materials are gathered in Tsaidam Basin, at K'o-erh-ko (36.35 by 100.12) and other places.

Amonium chloride is often found as a residue where Jurassic coal beds have burned out the coal seams. At Ko-hsi-erh-ta-ko and Sa-mu-chi-ta-ko in Kucha county (41.45 by 83.04), Sinkiang,
S
[317] ammonium chloride is dug and sold to silver workers for welding; the amount is small. At the Wu-chi-kou coal mine
S
[433] (39.01 by 106.03) Ping-lo-hsien, Ninghsia, production is over ten kilograms of ammonium chloride a year. Production can be increased if demand is warranted.

S
135 c. Jade and other precious Stones.

Jade and precious and semi-precious stones such as rubies, topaz, jasper, sapphires and emeralds are found and produced in Sinkiang, particularly along the Kunlun mountains in the southern
S
[439] part of the province. They are imported via Yümen (which literally means Jade Gate) at the extreme northwest of the Kansu corridor, to the rest of China.

S
631 political and military reasons. After the last British Consulate
131 of Kashgar was closed, the curtain has become even more
668 impenetrable there than in any other part of China. Not even
172 Chinese are allowed to travel into Sinkiang without special
(648) permits.

N F. Northwest As An Outlet for Chinese Overpopulation
167 The Northwest Region has been long regarded by the Chinese
185 as one of the major outlet areas for China's overpopulation. Once the plans to conserve water and soil are completed - especially along the Yellow River in Shensi and Kansu - arable land will be considerably extended. But water and soil conservancy will involve a lot of problems before the land is actually made productive - not to mention that its sustaining capacity is limited. Therefore the Northwest as an outlet for China's overpopulation is tentative and should only be regarded as a partial and temporary solution.

N 1. Extension of Arable Land by Irrigation and Soil Conservancy
311 According to plan the irrigated area in the mid-Yellow River
185 Basin will grow from 12,717,000 acres at present to some 19,105,000 acres. Agricultural output in the irrigated area will more than double. Annual grain output will increase by 6,741,000 long tons and cotton by 590,000 long gons. The loess regions with their barren mountains and desolate gullies covering 143,000 square miles, will become a land of plenty. Most of the land for irrigation development under the project will be in the provinces of Shensi and Kansu. ("China's Sorrow" Will Be No More - The Taming and Exploiting of the Yellow River, by Li Jui, People's China, August 6, 1955, p. 9-15).

S The area of arable land in Sinkiang has also been extended,
311 but it is not easy to ascertain by how much or by what means.
185 In 1953 it had reached twenty million mou, 4,100,000 more than in 1949 (PD. August 28, 1955); in 1954 more than 5,000,000 mou above 1949, i.e. a total of 21 million mou (KM. September 15, 1955; by 1955 22 million mou (PD. October 31, 1955).

According to the above figures, the increase between 1949 and 1955 would be six million mou. But there appear some discrepancies with other information. The difficulty is that the 1950 data for the extension of arable land in Sinkiang was not 16 million but 18.195 million mou (Newspaper Reading Handbook, Hankow, p. 25, 1950). Thus if the present data are reliable, the 1949-55 increase would be three million mou instead of six million, of which 1,100,000 mou are due to the labor of the Army Agrarian Production Troops.

S According to official reports, in 1953, 1.6 million tons of
● 433 food stuffs were produced in Sinkiang (PD. August 28, 1955). About the production in 1954, it is known that there was an

433 increase of 11.5 percent in the combined areas of Inner Mongolian, Sinkiang, and T'ung Autonomious Area in Kweichow. (KM. October 4, 1955). Supposing the increase in Sinkiang was ten percent which owing to the heavy natural disasters in 1954 is probably too high an estimate, it would mean 1.76 million tons of food stuffs in 1954, i.e. about 430 catties per head. In this context, a report which claimed that food production is 747 catty per head was published (KM. September 15, 1955).

311 312 185 Soil conservation is just as important as water conservation in land reclamation in arid and semi-arid areas. Human survival in Sinkiang for over 2,000 years has been involved in a continual fight against the aridity of the climate and the central Asiatic agricultural alkali, salt-saturated soil. Every year's floods convert even hitherto fertile lands into alkali, sterile soil. There are "Kariz" wells which are connected by underground canals, reaching a total length of 2,500 km. between Hami and Turfan only: This is evidently a means of combating the impermeability of the soil, which makes surface irrigation harmful.

503 653 According to 1954 Government Reports, 50,000 long or short canals with a total length of 30,000 km. have been repaired by the Army and by the people. (PD. August 28, 1955). In an October 1955 report: 1,600 canals are under repair and also 1,500 wells have been added (PD. October 21, 1955).

311 312 185 Large scale irrigation and water conservancy work are at present in the state of planning only: survey works are going on at the Manas and Urumchi Rivers and at the Turfan Basin for the future building of larger irrigation works and hydraulic power stations. (PD. October 31, 1955). But to fight against alkali soil will remain a continuous problem in land reclamation in Sinkiang as well as elsewhere in the arid and semi-arid Northwest of China. It was reported in 1955 that 300,000 mou of alkali land were reclaimed around Chigalik Lake in the northeast Hami area, and southwest Aksu. Rice has been planted in the former too, and cotton in the latter area. How long will the newly reclaimed land reclaim productive under the ever-increasing accumulation of alkali in the soil is still a problem which remains to be solved.

2. Soldier Colonization

433 648 167 466 Although no data concerning the exact number of Chinese soldiers in Sinkiang are available, the figures must be enormous - judged by the gigantic work undertaken by Chinese soldiers under the name of "Production and Construction Troops of the Sinkiang Military Area." One million one hundred thousand mou (166,000 acres) of the three million mou extended arable land during the period 1949-55 are due to the labor of the Army

433 Agrarian Production Troops. More than 40,000 mou are
648 using machines bought from Soviet Russia. The Army Agrarian
167 Production Troops themselves produced 31,000 tons of winter
466 wheat crop on 440,000 mou (124 catty per mou) in the spring of 1955. They are expected to produce 23,500 tons of cotton on 150,000 mou (310 catty per mou) in the same year. (PD. October 9, 1955). Eighty thousand out of the 150,000 mou cotton are at the Manas River (PD. June 29, and October 1, 1955). Forty-five percent of the total agricultural work of the Army troops is now being done by machines. (Report of Tao Shih-yu eh, Cf. CNA. No. 103, p. 2 or PD. September 27, 1955). In 1954 the total cotton cultivating area in Sinkiang was 800,000 mou. In 1955 it was supposed to be increased to 1,160,000 mou (PD. March 9, 1955).

The working troops of the Army are also developing virgin soil with the help of 184 tractors. The development of 600,000 mou south of Tien-shan chain of mountains was planned for 1955. It was reported in May and June 1955 that the troops had already broken up 20,000 mou of virgin land. Around Urumchi, one tractor works ten mou in an hour.

The Army is also taking part in the industrial development of Sinkiang and since 1950 has been constructing a textile mill, and iron and steel plant, a cement works, a power generator factory and coal mines. (PD. April 4, 1952; KM March 3, 1954; PD March 13, October 30, 1954 and July 14, 1955: KM September 16, 1955; and PD September 27, 1955).

"It would seem strange that the regular Army should engage in all these works. The production and construction troops which undertake the most arduous labor in inhuman, primitive conditions, undoubtedly consist of that multitude condemned to corrective labor in the border areas, of whom the Ministry of Public Security spoke of as people who will never come back from the border areas." (Cf. CNA Nos. 53 and 56.)

167 In addition to the exile of corrective laborers, a great number
466 of youngsters, boys and girls (apart from thousands of Party
177 cadres and several hundred thousands of soldiers) even from Junior Middle Schools are also being transferred to Sinkiang. In one single group 540 such youngsters traveled from Nanking (PD. August 26, 1955). The idea probably is that these youngsters going at an early age to Sinkiang will be more easily acclimatized.

433 3. A Resume of Possibilities and Their Limitations.

It has been estimated that the planned annual increase of 6.2 million long tons of grain can at most support another two million people at the present low standard of living of an average Chinese peasant. At least three million mou of irrigated land have been added in Sinkiang from 1949-55. It is said that in Sinkiang 110,000,000 mou could be added to the present 22,000,000.

1: Washington S-4 (no date) 1956 AF13 Northwest China AF13
Sinkiang AI1

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433 Under land reform in Sinkiang, on the average, 2.5 mou were
S distributed per person. (PD. August 28, 1954). According to
[161] the 1953 census - Sinkiang has a population of 4,873,608.
That means the average acreage per head would about 4.5
mou instead of 2.5. Taking this as a basis, the estimated
110,000,000 mou of possibly extended land for cultivation
can accommodate nearly another fifty million people; that
S will be ten times larger than its present population.
N Land reclamation by the development of irrigation in
311 Chinghai province and former Ninghsia along the Kansu
312 Corridor is not as promising as in Sinkiang and the mid-
185 Yellow River drainage area of Shensi and Kansu, because
of the limited amount of snow over the nearby high mountains.
Another three million people (twice its present population)
would be the most that Chinahai could support by land reclama-
tion for agriculture and pastoral development.

Summing up all the possibilities, an approximate total of another fifty-five million people which is nearly one and a half times the amount of its present total population can be supported at the present standard of living by the development of irrigation in land reclamation in the whole Northwest Region
N of China. According to the 1953 Census, the Northwest has
[161] a total population of 35,359,525 with an annual natural increase at a rate of twenty per thousand as the Chinese Communists claim. That means an addition of more than 700,000 people are added by natural increase each year. In approximately seventy years, another fifty-five million people will be added to its present population by natural increase only. But in view of an annual natural increase of nearly twelve million for the whole population of China, the Northwest can be used as a reservoir for the nation for a period of only four years. Therefore the Northwest is extremely limited as a population outlet for China. And the conversion of 110 million mou into arable land in Sinkiang is itself a gigantic task to fulfill; and conservancy of soil and water can hardly cope with the natural increase in population. Land reclamation in the Northwest should be regarded as a means of improving the living standards of the people rather than as an outlet for any further increase of the population.

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TABLE
III. Distribution of Oil Wells in Sinkiang.

Location	Year Drilled	Depth, meters	Past Production	Lat. & Long.
Ssu-cha-kou, k5 km W of Urumchi	1934.	shallow	small	43, 51 x 87.16
Ching-shih-hsia (Kaiavusun) or Hsi-ho) 95 km SE of Tarbagatai	Not available	seepages	fair	46.04 x 83.34
Tu-shan-tzu, 25 km SE of Wu-su	1934-42	2,275	From few hundred bbls (1942) to 1000 bbls in 1946; now 10-30 tons a day.	44.18 x 84.54
Hung-tung-shan (Kolayalun)	Not available	seepages	50 tons a day from 6 uncapped wells (1944)	42.06 x 82.47
Nan-shan, 40 km. W of Shu-fu, to the W of Kashgar	Not Available	seepages	small	29.32 x 75.31
Taklak, along Kunalik Range 50 km NE of Wen-su	Not Available	seepages	small	41.40 x 80.12
Hung-kou and An-chiu, SE of Wu-kia (Urukhe-kiati)	Not Available	seepages	2-3 gal/day(1949)	38.04 x 74.50

1: Washington S-4 (no date) 1956 AF13 Northwest China Sinkiang AII

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TABLE IV. China's Northwest: Coal Reserve Distribution by Provinces.[1]
(Reserve in million metric tons and production in tons)

Province	Anthracite	Bituminous	Total	Production(1955)
Shensi	750	71,200	71,950	650,000
Kansu	59	997	1,656[3]	110,000 (240,000 in 1947)
Ninghsia(now belongs to Kansu)	173	284	457	140,000
Chinghai	240	584	824	40,000
Sinkiang		31,980	31,980[2]	180,000

1. Mining Report, 1945, Chinese Geological Survey, cited by Nelson Dickerman: Natural resources of China, Foreign Minerals Survey, II, No. 7, (1948) Washington D. C. U.S. Bureau of Mines and also by George B. Cressey: China's 500 Million, 1955.

2. Present coal reserve of Sinkiang is estimated at 35,040 million metric tons.

3. A new discovery of 32 million metric tons of coal in 3arly 1955 should be added to Kansu's total reserve.

TABLE V. Iron Deposits in Sinkiang Province*

Locale	Deposit	Comment
Aksu	Ko-kan-chia	two deposits not of highest quality
	Tieh-pen-erh	" " " " " "
	Ko-la-pu-la-ko	
Ching-chi	Meng-ko-tu-ling	
Fu-yüan	Shui-hsi-kou	seven furnaces installed with 600 catties pig iron capacity
Sui-ting (Ili)	So-erh-ko-ling	
Pai-cheng	Ming-pu-la-kou mtn.	mining area of each said to be less than a mile square
	T'a-erh-chi mtns.	
	Ya-se-la-min mts	
	Neng-li-ha-ta mtn	
	K'o-shih-ko-ko-pa-shih mtn.	

1: Washington S-4 (no date) 1956 AF13 Northwest China AF13 Sinkiang All

S 316 135 327 433 635
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TABLE V. (Continued)

Locale	Deposit	Comment
Ta-cheng(Chuguchak)	K'o-la-ta-fu-pan to Ch'erh Shan	vein 130 miles long largest in province
T'a-pan-cheng	unnamed	
Yengi Hissar	I-Ko-jih-ya-yen mtn	
	A-ha-mai-ti mtn.	

* Noris, Martin R.: Gateway to Asia, Chap. IX, pp. 113-14.

TABLE VI. Distribution of Iron Ore Reserves of N. W. China by Provinces*

(Reserve in 1000 metric tons, and production in metric tons)

Province	Proved	Estimated	Total	Percent	Production
Shensi	4,847	6,000	10,847	0.50	1,800
Kansu	2,196	310	2,486	0.10	24,000
Ninghsia	5,079	2,500	7,579	0.35	
Chinghai		5,000	5,000	0.23	
Sinkiang	47,537	1,200	48,737	2.23	

*PAI, CC: General Statement on the Mining Industry. Geological Survey of China, special Report, No. 7, Dec., 1945.

N.B. 1. The total iron ore reserve of Shensi has been raised from 0.5% to 2.3% of the nation's total. That would give it an approximate total of 50,000,000 metric tons.

2. The total iron ore reserve of Kansu has been raised to 12,600,000 metric tons.

1: Washington S-4 (no date) 1956 AF13 Northwest China AF13 Sinkiang All

II. The Turkic People of the Northwest

563
101 A. The New Uighurs (or Eastern Turks)

The Turks of Sinkiang call themselves after the cities where they live, e.g. Kashgarlik, Turfanlik, Kuchalik, etc.... After [668] the Communist Revolution the Communists introduced the term Uighurs for the Eastern Turks, living in the Ili District. The term later was adopted by the Chinese.

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144 1. Physical characteristics

In one sense the Eastern Turks are the descendants of the old [167] Uighurs who migrated to present day Sinkiang during the ninth cen- [175] tury A.D., Later they had mixed with Indo-european tribes and other Turkish tribes of the Chagatai Ulus (empire) and to a small degree also with the Mongols. Thus, in the terminology employed by E. Frhr. von Eickstedt, "Rassenkunde und Rassengeschichte der Menschheit, Stuttgart, 1934, the Eastern Turks show many europid and some turanid racial characteristics, and only a slight degree of mongoloid traits.

142 A more detailed description of the average physical type of
141 Eastern Turkestan is as follows: dark hair and eyes, (sometimes
563 lighter occasionally blue eyes), white or yellowish skin with sometimes a slight inclination to brown, middle or tall stature, on the average 1680-1700 mm., with a tendency toward obesity. The head is definitely brachycephalic with a length-width index of 85-87, a longish-oval face, with wide cheek-bones, a straight and rather prominent nose, eyes lacking the mongoloid fold, and everted lips.

2. Economy

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563 The main occupations of the Eastern Turks are horticulture, agriculture and animal husbandry. The Eastern Turks breed camels, horses, sheep, and goats. They are famous for their fertile fruit-orchards, which are mostly artificially irrigated. Handicraft is fairly developed, but has no economic significance.

3. Religion

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563 The Eastern Turks are Moslems, adherents of the Sun sect.
[793] However, they display an attitude towards religion. This does not refer to the leading religious clergy who form a kind of a gentry together with the nobility of the rich landowners.

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614 4. Social organization

563 In contrast to the Kirghiz, Kazakhs, and Uzbeks, the Eastern Turks have lost their clan system and tribal organization completely. There is no antagonism between the Eastern Turks and
186 the remaining Turkic tribes, although the nomadic Turkic tribes
563 exhibit some contempt of the Eastern Turks. However, there is an old and remarkable hatred between the Turks and the Chinese, due partly to the greater efficiency and industriousness of the Chinese.

563 619 614 Known clan names of the Middle Horde are the following: Chakchat, Chardzhid, Turtul, Karaul, Karakisak, Kandzhagali, Achai, Tarakli, Kulchan-Argin, Kundelen, Usun, Tanabuga, Karabalik-Kipchak.

3. Economy

563 233 433 [342] The Kazakhs are still nomads. The rear camels, horses, sheep and goats. In contrast to the Eastern Turks who live in brick and mud houses, they live in felt tents. The Kazakhs are famous horse and camel breeders. Sheep play the most important role as sources of wool and meat. Like the Kirghiz and the Mongols, the Kazakhs have carefully explored, selected and defended summer pastures and protected valleys for the winter time.

563 181 The Kazakhs are very proud and independent. They dislike any political supervision and are known to have avoided tax collectors by crossing the borders to Mongolia or Soviet Russia.

4. Literature

563 538 [173] [212] The Kazakhs have a huge folklore which is being handed down from generation to generation. They still use the Arabic script, but only a small percentage of noblemen and clergy are literate.

5. Religion

563 991 The Kazakhs are Moslems, belonging to the Sunna sect, but they are in no way passionate and ardent believers like, for instance, the Turks of Persia. Their nomadic life obviously does not permit strict observance of the Islamic regulations.

D. The Kirghiz

101 1. History

175 563 Prior to the Communist Revolution the Kirghiz were called Kara-Kirghiz or Burut. When the Kirghiz were driven out of Mongolia by the Kara Khitai (shortly before 924 A.D.), some moved southwest into the areas where they now live.

563 [619] [614] [144] The Kirghiz are subdivided into two wings: Ong-the right one, and Sol-the left one. Like the Kazakhs, the Kirghiz have a very well preserved clan system. They are believed to represent the oldest Turkish tribe. As far as their physical characteristics are concerned, what has been said about the Kazakhs is also true for the Kirghiz; i.e., the Kirghiz also had mixed with Mongol clans at a very early period.

2. Their regulation

[147] [181] [212] [538] The Kirghiz have a reputation for being extremely resistant to rigorous climate, hunger and diseases. They are well known for their wit and sense of humor. Although most are illiterate, their vivid folklore is handed down in every single tent and many Kirghiz tribesmen are able to quote thousands of rhymes from their epic songs.

3. Economy

563 361 233 Their weather-beatend faces show that they live in the mountains. They breed horses, camels, sheep, goats and yaks. When

1: Washington S-4 (no date) 1956 AF13 Northwest China
Sinkiang AI1

161 About two-thirds of the total area of Sinkiang is uninhabited.
311 In 1946 the number of farm households was 344,000 and the average number of acres per farm was around 7.1. (Cressey, Land of the
[114] 500 Million, p. 105. This figure, according to other sources, is rather high.. These sources give a figure of from 0.5 to three acres per farm.) The total amount of cultivated land was 2,455,000 acres or roughly one per cent of the total acreage of the region. The greatest concentration of population is south of the Tienshan, or more precisely, in the southwestern corner of the province near the Soviet border. These are the districts of Khotan, Aksu, and Yarkand which contain over two-thirds of the population of the whole province. North of the Tienshan, the greatest concentration is in the Ili valley.

243 According to the figures supplied by Owen Lattimore, the
433 annual wheat crop of Sinkiang before the Communist conquest was about 253,000 tons, about forty-four per cent of the total crop of grain, beans, and seeds. Corn reached 331,000 tons or twenty-eight per cent. Rice was about 71,000 tons or six per cent, and sesame, rapeseed, and linseed accounted for 71,000 tons or six
[244] per cent. Barley, kaoliang, sorghum millet, beets, and peas amounted to 119,000 tons or ten per cent. Millet, soybean, and green beans totalled 71,000 tons or six per cent. Total agricultural output was 916,000 tons. (Pivot of Asia, p. 167.)

243 Winter wheat is grown north of the Tienshan where, in spite of the cold, the seeds are protected by the cover of snow; only spring wheat can be grown south of the Tienshan, where lack of snow cover exposes the seed to being frozen in the ground. Wheat is tending to be displaced by rice in oasis fields because the fields are highly alkaline. But the yield of rice is lower than that of corn, because the Uighur farmers do not transplant the young rice
[461] shoots as Chinese farmers do. Although the amount of labor
[433] expended on a unit of land is about the same in Sinkiang as in China Proper, the yield is somewhat less.

248 Cotton is the most important commercial crop in Sinkiang. It was grown in Turfan as early as the T'ang Dynasty (618 - 907). Two varieties are raised: the native and the American. In 1943, 100,000 acres of cotton were planted, seventy-three per cent with native cotton and twenty-three per cent with seed
288 of the American varieties. Silk is also an ancient crop of com-
433 mercial importance. Its production reached 350,000 kg. in 1942 but fell drastically to 100,000 kg. in 1943.

592 The family group, living together under one roof, is the basic
241 producing unit in oasis agriculture. It often includes married children, which makes it slightly larger than the average farm family in China. While farms in the Tarim Basin average from
[423] 4.5 to six acres in size, larger than the 3.5 acres given for China Proper, because the family in Sinkiang is larger, there is only

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668 ning in agriculture has become more complex and difficulties are encountered in realizing annual targets. The absence of trained technicians to introduce new farming techniques, the lack of accountants and organizers in the cooperatives, and the so-called ideological backwardness of many of the Communist cadres themselves have prevented rapid cooperativization. We will now examine very briefly the progress achieved in the different regions of the Northwest and the problems which have arisen to prevent agricultural development. In this way, the pattern of Chinese Communist agricultural planning can be observed more clearly. Henceforth, all statistics concerning the number of co-ops, agricultural output, etc., are Communist claims and, of course, must be carefully considered.

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B. Application of Communist Agricultural Policy to the Northwest

1. Sinkiang

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[476] By June, 1955, nearly six years after the area was occupied by the Communist Army, there were 75,215 mutual aid teams (it is not known how many of these were on a permanent basis) and the agricultural producer cooperative numbered 1,702 with roughly 66.4 per cent of the peasant population participating in some form of co-op. By the end of 1956, in response to Mao's directive to hasten the creation of agricultural producer cooperatives, it is planned to increase their number to 5,100 and by 1957 to 10,240. (Far Eastern Economic Review. December 1, 1955, pp. 686-87.)

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[474] Emphasis has been on raising the production of wheat, oil seed bearing plants, and cotton, by extending cultivation. The Communists attribute all increases in production to a result of further consolidation and development of the cooperative movement. Although there is a paucity of data on output, acreage, and output per acre, the following table has been pieced together from the information available, in an attempt to give some comparisons of increases attained during the Communist period with that of 1949. The figures for the Communist period have been obtained from 1954 and 1955 reports. See Table 1.

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175 The government has established agricultural stations, in order to show the peasants of various nationalities how to improve their farming methods. In 1955 it was reported that Sinkiang had seventy such stations. Two tractor stations have also been opened in Urumchi and Sui-ting. These stations have sought to improve production by planting Ukrainian winter wheat and S-3173 cotton, and promote better procedures of farming such as summer ploughing, autumn ploughing, winter irrigation, sowing in rows, close-planting, and cotton-pruning. They have made efforts to wipe out insect pests. The Soviet Union sent

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242 The Soviet Union sent
668 thirty-three airplanes and large numbers of locust experts to
433 spray insecticides over an area of some 2,669,000 mow (or
[177] 405,688 acres) during 1952-1955. On the state farms, the Army
[475] has done the lion's share of the work of reclaiming land, building
[701] irrigation works, erecting experimental farms and stations and operating them. (Union Research Service, Oct. 14, 1955. p. 7, No. 9.)

654 The Communists reported that they have given financial and
668 technical assistance to the various nationalities who till the soil
241 or engage in pastoral activities. By the end of 1954, agricultural
175 loans totalling some 26,140,000 yuan (U.S. $1,061) and some 46,000 farming implements had been supplied to the peasants, enabling every peasant household to have one trowel of its own and every 1.3 households to own a plow. These small figures indicate that assistance has been meagre; but even this might enable the peasants to increase output as compared to output obtained by previous farming implements.

241 Whether agriculture will prosper in Sinkiang depends entirely
312 on the steps taken in water conservancy and the proper utilization
668 of water. Already five million additional mow of land (160,000
175 acres) have been irrigated in the past six years and the irrigated acreage in 1954 has been increased by 30.2 per cent since 1949. Reservoirs have been constructed like the well-known "Red Wild Goose Reservoir" and the "Peace Reservoir" which both now
[475] irrigate more than 237,000 mow (36,024 acres of land). Three
[474] state farms, collective farms, and a dozen or so agricultural co-ops have been formed in the area.

231 By the end of 1954, the total number of livestock in the whole
433 province numbered 17,105,000 head, an increase of 7.47 per cent
175 over 1953. (In 1947 the total number of livestock was 15,037,000.
668 The figure reported for 1954 indicates a 13 per cent increase.) The plan for 1955 is to raise the number fo 18,987,567 head, a net increase of 11 per cent. This will include 537,280 head of large and small animals of improved breed (including 515,792 sheep, 7,930 large domestic animals, 13,538 pigs); 2,839,140 head of livestock will be innoculated against or cured of various diseases. The Chinese Communists complain, however, of many defects in animal husbandry. During the past winters, insufficient feed was gathered and many animals died. It was estimated that some 200,000 died in the spring of 1954, an approximate loss of one per cent per annum.

313 The forestry policy has been to protect existent forests from
668 fire and damage, to survey forest areas suitable for afforestation, to plant saplings there, and to afforestate areas near rural villages for the development of co-ops and state farms. Each year, the quota mou to be afforestated is set and state departments undertake to meet these quotas. Nurseries have been built and seedlings planted in these tracts.

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392 Five tractor repair works were under construction in 1955.
493 Each plant will have sixteen or fifteen mechanized worships. When completed, they will be able to repair as many as 475 tractors and combine harvesters each year in addition to making other farm tools and spare parts.

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327 There are scattered reports on other industrial developments
398 in Sinkiang, such as: (1) the August First Iron and Steel Plant,
399 (2) the October Motor Car Repair and Assembly Shop, (3) the
256 Urumchi Automatic Electric Plant, (4) the modernized August
288 First Flour Mill, (5) the Khotan Silk Factory, (6) Houcheng
399 Airplane Manufacturing Factory, and (7) more than a dozen
237 animal products processing plants, which process skins, furs
439 and intestines for the purpose of exporting them to the Soviet Union. But detailed information on these projects is not available.

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121 5. Handicrafts.

178 The foregoing analysis concerns itself with the development
463 of modern industries in the Northwest under the Communist regime. But handicrafts still play a very important role in this

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463 area as they do in other parts of the country. According to a 1951 report, the main handicrafts in the Northwest were as follows:

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[286] (1) Cotton cloth. A side line of the peasant, it was produced practically everywhere in the area. However, the more important producing districts are: 1. Sian, Paochi, in Shensi, 2. Tien-shui, Ho-hsi and Min-chin in Kansu, and 3. Turfan, toqsun and Aqsu in Sinkiang. In terms of quantities, the total annual output

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[433] in Shensi is approximately 3,779,670 pieces; in Kansu, 3,505,760 pieces; in Sinkiang, 4,400,000 pieces.

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[323] (2) Pottery. The annual output of pottery in the Northwest amounts to over 4,000,000 pieces. Of that amount Shensi produces
[433] more than 3,000,000 pieces, Kansu, 500,000, Ninghsia, 200,000, and Sinkiang, 50,000. The more famous pottery-producing districts are: 1. Huang-pao-chen and Chen-lu-chen in Tung-chuan, Shensi, which have been famous since the Sung Dynasty, 2. Yao-kai in Yung-teng, Kansu, 3. Ah-kan-chen, Lanchou, Kansu, and An-kou-yao, Hua-ting, Kansu. The production consists mainly of pots, bowls, tea-pots, plates and tea-cups.

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463 (3) Paper. While paper is manufactured in many places in this
289 area, the more important paper-producing districts are: 1. Nan-cheng (Han-chung), Shensi, 2. Khotan, Sinkiang, 3. K'ang-cheng and Tien-shui, Kansu, and 4. Ying-chuan, Ninghsia. The main varieties are as follows:

(a) The "rough-edge" paper. Usually used as a writing paper,
N it is produced and consumed mainly in Shensi. The annual output
[433] is about 192,490 bundles.

(b) The "Flax paper." It may be made of white or black flax,

and is used mainly for wrapping. The annual output of the white flax paper is about 966,870 bundles, and that of black flax paper is 3,982,480. Part of this is exported to Szechwan, Hankow and Anhwei.

(c) The "improved" paper. It is produced and consumed mainly in Kansu, at the rate of some 300,000 bundles per year.

(d) The "mulberry-skin" paper. It is produced and consumed mainly in Sinkiang, at the rate of some 565,977 bundles a year.

(4) Bamboo articles. A side-line of farmers, they are made in many places, especially in Hua-hsien and Han-chung, in Shensi and Min-hsien, in Kansu. The annual output is estimated as follows: (1)farming implements, 29,280 piculs, (2) sieves, 132,300, (3) large bamboo baskets, 480,000, and (4) small bamboo baskets, 27,000.

(5) Straw hats. Also a side-line of farmers, they are made in many places, especially in Feng-hsiang, Wei-nan, Lin-tung, and Chang-an, in Shensi. The annual output in Shensi alone exceeds 1,377,900 hats.

(6) Brooms. They are made mainly in the districts near Mount Chung-nan, such as Mei-hsien and Chang-an. The annual output exceeds 800,000 brooms.

(7) Straw mats. They are produced mainly in Sui-te, Shensi, Chang-i, Kansu and Ninghsia City, Ninghsia. The annual output exceeds 3,000,000 pieces.

(8) Wooden rakes. One of the main farming implements in the Northwest, they are made mainly in Chang-an, Pu-cheng and Tung-chuan, Shensi. The annual output is about 88,000 pieces.

(9) Iron utensils. They are produced mainly in Pao-chi and Feng-hsiang in Shensi, and Tienshui in Kansu. The annual output is about 76,000 counts.

(10) Carpets. Carpet-making is one of the main handicrafts in Sinkiang. The carpets come in various sizes, up to eight by sixteen feet. The annual output exceeds 10,000 square feet. Of that quantity, some six thousand square feet is exported to India, Afghanistan and Soviet Russia and the rest is sold locally or to other provinces in the Northwest.

6. Evaluation and Prospects.

For the time being, the Communists seem to have concentrated on two things in industrializing the Northwest, one being the cotton industry in Shensi and Sinkiang, and the other being the oil industry in Kansu, Sinkiang and Chinghai. From the economic point of view, these developments are not unnatural, because Shensi and Sinkiang have been famous for their raw cotton, and the oil reserve in China is largely located in the Northwest.

While the present industrial development in the Northwest may not appear so impressive, this area will probably become

one of the most important industrial areas in China for three reasons. First, the Northwest, especially Sinkiang, has shown great promise in mineral deposits. The Communists have sent out thousands of geologic prospectors to this area, and reports of new discoveries have frequently been publicized by the Communist papers, (see the section on Mineral Resources). Second, the geographical location of this area is such that it would be the ideal location for China's new industries from the strategic point of view. Last, as this area borders on Soviet Russia, it would be more convenient from the standpoint of accepting technical aid from Russia.

Based perhaps on the above-mentioned reasoning, the Communists have paid special attention to the future development of this area. In Sinkiang, for instance, before the Communists took over, there was very little industrial production. But in 1952, the total industrial production in Sinkiang amounted to New JMP$39,075,400, not including the value of handicrafts, which amounted to New JMP$135,598,000. In terms of percentages of the 1952 production in Sinkiang, the industrial production accounted for 5.71 percent of the total, and the handicrafts accounted for 19.81 percent. According to plans, by the end of 1957, the value of industrial production in Sinkiang will be increased to New JMP$292,758,500, or 749 percent of that of 1952. If these plans are carried out, industrial production will account for 22.64 of the total production in Sinkiang and handicrafts will account for 15.09 percent of the total; the planned total production for 1957 would be New JMP$1,293,227,200.

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*668 in understanding the long-run economic potential of this region,
489 it is equally true that there must have been some other reasons
18 forcing them to develop this remote region more swiftly than they
433 might otherwise have done, investing in it sizable amounts of much needed capital backed by considerable forced labor. Other factors, both internal and external, should therefore be taken into consideration. In the first place, Communist China had made a tremendous effort to shift the center of its gravity from the coastal regions into these relatively empty lands bordering Soviet central Asia, perhaps partly as a result of the United Nations embargo and the Korean War. Secondly, the forced pace of development in the Northwest might be partly a defense measure. During the War in Korea it became clear how vulnerable Manchuria was to bombing attacks. Had the United Nations chosen to do so, most of Manchuria's industrial complexes could have been destroyed. But in the Northwest, factories, railways and mines were far
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[648] safer than anywhere else in China. Moreover, this area would assure maximum secrecy for projects which Red China and Russia were reported to have been jointly undertaking. ("I Saw Communist China" by Robert Guillain in the Saturday Evening Post, June 2, 1956. p. 114.)

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*668 Following on the heels of the railway construction work, a
433 huge oil refinery at Lanchou was built. It is also reported that
[382] between Lanchou and the site of the refinery, a road was con-
[491] structed more than twice as wide as Fifth Avenue in New York
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[498] city, and a large hill thickly covered with houses was completely leveled to make the road straight. At Lanchou the railway yard under construction contained fifty kms. of tracks, with modern equipment such as turntables, grain silos, refrigerating plants and the like, all brought from Russia. Along the wide road, the beginning of what is called New Lanchou has arisen. In Sinkiang,
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668 a new city was born in Urumchi, where giant factories have been
• 433 built, including the Sinkiang Non-ferrous Metals Co., the Sin-
321 kiang Petroleum Co., the Sinkiang "August 1st" Iron and Steel
328 Plant, the Sinkiang Machinery Plant, the October Motor Car
382 Repair and Assembly Shop, the Urumchi Automatic Electric Plant,
39 and the like. This accomplishment in industrial construction and
[489] future plans of industrial development are indeed very much tied up with communications development.

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*668 Communist China may very well focus its principal attention
185 on the Northwest during the period of its second Five Year Plan
433 scheduled to begin in 1958, just as the first Five Year Plan con-
[648] centrated on the Northeast. The Northwest might then play a major role in the economic relations between China and Russia, and be industrialized to a level comparable with Manchuria.

It may therefore be concluded that so long as there are both internal and external pressures, and the "lean-to-one-side"